

CLAIMS:

1. A diagnostic composition comprising:

- (a) at least one nucleic acid molecule comprising the nucleotide sequence encoding Futrin 1,2,3 or 4 as depicted in Figure 3; and/or
- (b) at least one polypeptide molecule comprising the amino acid sequence encoding Futrin 1,2,3 or 4 as depicted in Figure 4 or 6a; and/or
- (c) at least one nucleic acid molecule the complementary strand of which hybridizes to a nucleic acid molecule of
 - (a) and which encodes a polypeptide with the biological activity of Futrin 1, 2, 3 or 4; and/or
 - (d) at least one fragment of (a), (b) or (c) having the biological activity of Futrin 1, 2, 3 or 4;
 - (e) at least one nucleic acid molecule the sequence of which differs from the sequence of the nucleic acid molecule of (a), (c) or (d) due to the degeneracy of the genetic code, and/or
 - (f) at least one ligand which is capable of specifically binding to the molecule of (a), (b), (c), (d) or (e).

2. The diagnostic composition of claim 1, wherein the ligand is an antibody.

3. The diagnostic composition of claim 1, wherein the nucleic acid molecule of part (d) has a length of at least 10 nucleotides.

4. The diagnostic composition of claim 1 or 2, wherein the ligand is detectably labeled.

5. The diagnostic composition of claim 4, wherein the label is selected from the group consisting of a radioisotope, a

bioluminescent compound, a chemiluminescent compound, a fluorescent compound, a metal chelate, or an enzyme.

6. The diagnostic composition of any one of claims 1 to 3, wherein the nucleic acid molecule, polypeptide or ligand are bound to a solid support.

7. Use of a nucleic acid molecule, polypeptide and/or ligand for the preparation of a diagnostic composition as defined in any of claims 1 to 6 for the diagnosis of a disease associated with (a) aberrant expression of *Futrin 1, 2, 3 and/or 4* and/or (b) aberrant activities or amounts of a *Futrin1, 2, 3 and/or 4* polypeptide.

8. Use according to claim 7, wherein the target to which the nucleic acid molecule hybridizes is a mRNA.

9. A method of diagnosing a disease associated with (a) aberrant expression of *Futrin 1, 2, 3 and/or 4* and/or (b) aberrant activities or amounts of a *Futrin 1, 2, 3 and/or 4* polypeptide in a subject comprising:

(a) determining (a) the amount of expression of *Futrin 1, 2, 3 and/or 4* and/or (b) the amount of biologically active *Futrin 1, 2, 3 and/or 4* polypeptide in a biological sample; and

(b) diagnosing a disease associated with (a) aberrant expression of *Futrin 1, 2, 3 and/or 4* and/or (b) aberrant activities or amounts of a *Futrin 1, 2, 3 and/or 4* polypeptide or a risk for the development of such disease based on an altered amount of expression of *Futrin 1, 2, 3 and/or 4* and/or (b) an altered amount of biologically active *Futrin 1, 2, 3 and/or 4* polypeptide compared to a control.

10. A method for identifying a binding partner to a *Futrin 1, 2, 3 and/or 4* polypeptide comprising:

- (a) contacting said polypeptide with a compound to be screened; and
- (b) determining whether the compound effects an activity of said polypeptide or whether binding of the compound to said polypeptide has occurred.

11. A method for identifying activators/agonists or inhibitors/antagonists of a Futrin 1, 2, 3 and/or 4 polypeptide comprising the steps of:

- (a) incubating a candidate compound with said polypeptide;
- (b) assaying a biological activity, and
- (c) determining if a biological activity of said polypeptide has been altered.

12. A method of identifying and obtaining a drug candidate for therapy of a disease associated with (a) aberrant expression of the gene encoding Futrin 1, 2, 3 and/or 4 and/or (b) aberrant activities or amounts of Futrin1, 2, 3 and/or 4 comprising the steps of

- (a) contacting a Futrin 1, 2, 3 and/or 4 polypeptide or a cell expressing said polypeptide, and optionally the corresponding ligand(s), in the presence of components capable of providing a detectable signal in response to binding to said drug candidate to be screened; and
- (b) detecting presence or absence of a signal or increase of the signal generated, wherein the presence or increase of the signal is indicative for a putative drug.

13. An activator/agonist or inhibitor/antagonist of a Futrin 1, 2, 3 and/or 4 polypeptide or binding partner of said polypeptide(s) obtainable by the method of any one of claims 10 to 12.

14. A pharmaceutical composition comprising a compound which is capable of modulating the expression of a gene encoding Futrin 1, 2, 3 and/or 4 or the activity of Futrin 1, 2, 3

and/or 4 and a pharmaceutically acceptable excipient, diluent or carrier.

15. The pharmaceutical composition of claim 14, wherein the compound stimulates expression of the gene encoding Futrin 1, 2, 3 and/or 4 or the activity of Futrin 1, 2, 3 and/or 4.

16. The pharmaceutical composition of claim 15, wherein the compound is a nucleotide molecule encoding a polypeptide having a biological activity of Futrin 1, 2, 3 and/or 4, a Futrin 1, 2, 3 and/or 4 polypeptide, an activator/agonist or inhibitor/antagonist of a Futrin 1, 2, 3 and/or 4 polypeptide or binding partner of said polypeptide(s) obtainable by the method of any one of claims 10 to 12.

17. Use of a compound as defined in claim 16 for the preparation of a pharmaceutical composition for the treatment of a disease associated with (a) aberrant expression of Futrin 1, 2, 3 and/or 4 and/or a gene involved into the wnt signal cascade and/or (b) aberrant activities or amounts of a Futrin 1, 2, 3 and/or 4 and/or polypeptide involved into the Wnt signal cascade.

18. Use according to claim 7 or 17, wherein the disease is a tumor or a disease of the kidneys, muscle, bones and eyes.

19. Use of a nucleotide molecule encoding a polypeptide having a biological activity of Futrin 1, 2, 3 and/or 4, a Futrin 1, 2, 3 and/or 4 polypeptide, an activator/agonist of a Futrin 1, 2, 3 and/or 4 polypeptide or binding partner of said polypeptide(s) for the preparation of a pharmaceutical composition for activating or inhibiting the Wnt signal cascade.

20. Use according to claim 19 for supporting regenerative processes.